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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/731,163	12/10/2003	Mamoru Nakasuji	032154	5100

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EXAMINER

FERNANDEZ, KALIMAH

ART UNIT

PAPER NUMBER

2881

DATE MAILED: 05/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

Office Action Summary

Application No.

10/731,163

Applicant(s)

NAKASUJI ET AL.

Examiner

Kalimah Fernandez

Art Unit

2881

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 February 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 6-9,24 and 27-30 is/are pending in the application.
- 4a) Of the above claim(s) 1-5,10-23,25 and 26 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 6-9,24 and 27-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 6-8,24, and 27 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement.

The claim(s) contains subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The omission of the limitation—a relatively weak region against dielectric breakdown violates the written description requirement. The originally filed disclosure does not support the broaden limitation--- “a specified region.” There is no support for the broaden limitation, because it is clearly stated that the irradiated region must be identified by a relatively weak region. Specifically, pg. 28, lines 16-20 states the entire sample is irradiated, unless there is a relatively weak region, then and only then are regions identified for particular irradiation

treatment; thus, the region must be identified by a relatively weak region and not merely any specified region.

3. The broaden limitation would encompass simply selecting a region on a sample and irradiating that specified region, wherein the specification does not support such a widened patent-protection area.

Election/Restrictions

4. Claims 1-5, 10-23, and 25-26 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention(s), there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 2-25-05.

5. **It is noted applicant indicates the status of claims 12 and 19-23 as original in his amendment received on 2-25-05. The proper status of claims 12 and 19-23 is withdrawn.**

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

7. Claims 6,9,24, 27-28 and 30 are rejected under 35 U.S.C. 102(e) as being anticipated by US Pat No. 6,507,044 issued to Santana, Jr. et al supported by webpage "Technical Sales Solution, LLC."

8. Santana, Jr. et al disclose the use of FEI's 820 Dualbeam, which employs an electron gun as described (see for example col.8, lines 13-16; col.8, lines 43-55). The advertising webpage "Technical Sales Solution, LLC" illustrates the 820 Dualbeam, in which Schottky electron gun is the electron source.
9. Santana, Jr. et al disclose a secondary electron detector (col.2, lines 60-65).
10. Santana, Jr. et al disclose a controller for controlling the electron beam so as to irradiate a specified region (see for example col.2, lines 45-53; col.9, lines 32-40).
11. As per claim 9, Santana, Jr. et al disclose the specified region being a weaken region (see col.3, lines 13-15; col.9, lines 32-40).
12. As per claim 24, Santana, Jr. et al disclose preparing wafers; processing the wafers; evaluating the processed wafers using electron beam apparatus as claimed in claim 6; repeating the steps and assembling devices using the processed wafers (see for example col.1, line 49-col.2, line 15).
13. As per claims 27 and 30, Santana, Jr. et al disclose the beam has a small dose level (col.9, lines 6-15).

14. As per claim 28, Santana, Jr. et al disclose the region is weak (col.9, lines 10-15), which has a gate oxide film of a transistor formed thereon (see for example col.7, lines 41-49).

Claim Rejections - 35 USC § 103

15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

16. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over US Pat No. 6,507,044 issued to Santana, Jr. et al supported by webpage "Technical Sales Solution, LLC" as applied to claim 6 above, and further in view of US Pat No 5,389,787 issued to Todokoro et al.

17. Santana, Jr. et al teach the claimed invention, but do not explicitly teach a decelerating electric field for a primary electron between an objective lens and the sample.

18. However, Todokoro et al teach the desirability of the recited decelerating field (see col. 2, lines 14-46).

19. It would have been obvious to an ordinary artisan at the time of the invention to combine Santana, Jr. et al and Todokoro et al, because Todokoro et al teach increased ease-of-use (col.2, lines 39-56).

20. Claims 8 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Pat No. 6,507,044 issued to Santana, Jr. et al supported by webpage "Technical Sales Solution, LLC" as applied to claims 6 and 27 above, and further in view of applicant's admitted prior art "A Practical Electron Lithography System, IEEE Transactions on Electron Devices, vol.-ED-22, No. 6, July, 1975, pp.385-391" (hereafter "AAPR") in pg. 29, lines 6-8 of applicant's specification.

21. Santana, Jr. et al disclosed the claimed invention except for beam blanking such that the beam so as not to be irradiated onto the weak region.

22. However, AAPR teaches that blanking is common and within the level of ordinary skill in the scanning electron beam apparatus art.

23. It would have been obvious to an ordinary artisan at the time of the invention to combine Santana, Jr. et al and AAPR, because a blanking method is desirable to increase beam control accuracy.

Conclusion

24. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kalimah Fernandez whose

telephone number is 571-272-2470. The examiner can normally be reached on Mon-Tues 6:30-3:30; Wed-Thurs 8-5 and Fri.9am-6 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John R. Lee can be reached on 571-272-2477. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KF



JOHN R. LEE
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